

**Notice of Allowability**

Application No.

09/778,172

Applicant(s)

YABE, AKIRA

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6 August 2004.
2. ☒ The allowed claim(s) is/are 1-3 and 5-18, now renumbered as claims 1-17
3. ☒ The drawings filed on 07 February 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. *Claims 1-18 have been presented for examination based on applicant's amendment filed on 6 August 2004. Claims 1-3 and 5-18 have now been allowed over the prior art of record. Applicants have canceled claim 4.*

### **Response to Arguments**

2. *Applicant's arguments filed 6 August 2004 have been fully considered and found to be persuasive.*

*Regarding applicant's response to 112(2) rejections:* *The examiner withdraws the 112(2) rejection of in view applicant's amendment to the claims and arguments submitted 6 August 2004.*

*Regarding applicant's response to 102(b) rejections:* *The examiner withdraws the 102(b) rejections (Fuse, Dobson) in view applicant's amendment to the claims and arguments submitted 6 August 2004.*

### **Allowable Subject Matter**

3. *Claims 1-3 and 5-18 have been allowed over the prior art of record.*

*The following is an examiner's statement of reasons for allowance:*

*Applicants are disclosing a method, apparatus, and computer code medium for optimizing the design of an optical system by optimizing optical properties (parameters) to a target value using an optimizing function that includes optical aberrations. This has been disclosed in the prior art of record.*

While these features are individually disclosed in the prior art, the prior art of record does not meet the conditions as suggested in MPEP section 2132, namely:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."

In particular, the prior art of record does not disclose the specific sequence of steps relating to optimizing the target value  $t_i$  and weight value  $w_i$  of the first merit function on the basis of the second merit function, and then re-optimizing the optical system on the basis of automatically adjusted first function, in the context of the claims. Claims 2-3, and 5-14 are allowable as being dependent from independent claim 1. Claims 16, and 18 are allowable as being dependent from independent claims 15, and 17 respectively.

The closest prior art uncovered during examination is:

U.S. Patent 6,567,226 issued to Fuse: teaches optimizing optical system design by optimizing optical properties using an optimizing function including optical aberrations.

"Fast Image-quality-based optimization of optical system", S. J. Dobson: teaches optimizing optical properties to a target value using an optimizing function that includes aberrations.

*While the prior art of record discloses various arrangements of optical system design by optimizing optical properties, it does not explicitly disclose the sequence of steps relating to optimizing the target value  $t_i$  and weight value  $w_i$  of the first merit function on the basis of the second merit function, and then re-optimizing the optical system on the basis of automatically adjusted first function, as now recited in independent claims 1, 15, and 17. Applicant's have indicated that these steps are interpreted as specifically disclosed on specification page 20, last line, page 22, line 12, and page 27, line 5 to page 29, line 4, and in Figures 2 and 3. (see: amendment 6 August 2004, page 12, line 10) This feature renders the claimed invention non-obvious over the prior art of record.*

*Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."*

### **Conclusion**

4. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the*

Art Unit: 2128

*examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306*

*Fred Ferris*, Patent Examiner  
Simulation and Emulation, Art Unit 2128  
U.S. Patent and Trademark Office  
Randolph Building, Room 5D19  
401 Dulany Street  
Alexandria, VA 22313  
Phone: (571-272-3778)  
Fred.Ferris@uspto.gov  
December 22, 2004

  
JEAN HOMERE  
ASSISTANT PATENT EXAMINER